

EXHIBIT 3

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571-272-7822

Paper 12
Date: December 6, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.,
Petitioner,

v.

GESTURE TECHNOLOGY PARTNERS, LLC,
Patent Owner.

IPR2021-00920
Patent 7,933,431 B2

Before JONI Y. CHANG, KRISTI L. R. SAWERT, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

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I. INTRODUCTION

A. *Background and Summary*

Petitioner, Apple Inc., requests that we institute an *inter partes* review to challenge the patentability of claims 1–31 (the “challenged claims”) of U.S. Patent 7,933,431 B2 (Ex. 1001, “the ’431 patent”). Paper 1 (“Petition” or “Pet.”). Patent Owner, Gesture Technology Partners, LLC, argues that Petitioner’s request is deficient and should not be granted. Paper 8 (“Preliminary Response” or “Prelim. Resp.”). With our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 9, “Reply”) and Patent Owner filed a Sur-reply (Paper 10, “Sur-reply”).

Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we institute an *inter partes* review.¹

B. *Related Matters*

The parties identify these related matters: *Gesture Technology Partners, LLC v. Huawei Device Co., Ltd.*, No. 2:21-cv-00040 (E.D. Tex.); *Gesture Technology Partners, LLC v. Samsung Electronics Co.*, No. 2:21-cv-00041 (E.D. Tex.); *Gesture Technology Partners, LLC v. Apple Inc.*, No. 6:21-cv-00121 (W.D. Tex.); *Gesture Technology Partners, LLC v. Lenovo Group Ltd.*, No. 6:21-cv-00122 (W.D. Tex.); and *Gesture Technology Partners, LLC v. LG Electronics, Inc.*, No. 6:21-cv-00123 (W.D. Tex.). Pet. 76; Paper 6, 1–2. Patent Owner identifies these related Board proceedings: IPR2021-00917; IPR2021-00922; and IPR2021-00923. Paper 6, 2.

¹ Our findings and conclusions at this stage are preliminary, and thus, no final determinations are made.

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C. The '431 Patent

The '431 patent “relates to simple input devices for computers, particularly, but not necessarily, intended for use with 3-D graphically intensive activities, and operating by optically sensing a human input to a display screen or other object and/or the sensing of human positions or orientations.” Ex. 1001, 2:7–11. The '431 patent further states that it relates to “applications in a variety of fields such as computing, gaming, medicine, and education.” *Id.* at 2:15–17. For instance, the '431 patent describes “a combination of one or more TV cameras (or other suitable electro-optical sensors) and a computer to provide various position and orientation related functions of use.” *Id.* at 11:54–58.

Figure 8A, reproduced below, illustrates the control of functions via a handheld device.

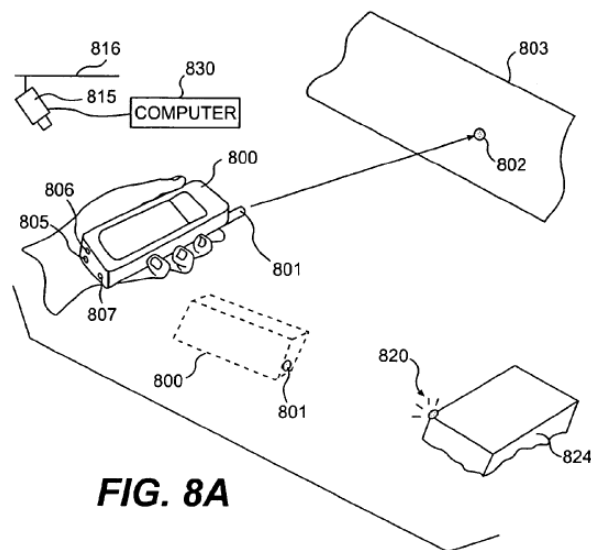


Figure 8A shows a perspective view of a cellular phone (800) using a laser spot projector (801) to project a laser spot on a detector (802) in a dashboard (803). *Id.* at 12:17–20. The '431 patent discloses that, alternatively or in conjunction, round dot targets (805, 806, 807) can be sensed on the cellular phone (800), such as by a TV camera (815). *Id.* at 12:20–25.

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In another example, the cellular phone (800) can be used to signal a fax unit (824) to print data from the phone by pointing the cellular phone toward the fax unit. *Id.* at 12:42–45. TV camera (815) scans images of the dot targets (805, 806, 807) and a computer (830) analyzes the target images to determine the position and/or orientation or motion of the cellular phone to thereby determine if a command is being issued with movement of the cellular phone. *Id.* at 12:45–51. The computer then commands the fax unit to print if this action is signaled by the position, orientation, or motion of the cellular phone. *Id.* at 12:51–52.

D. Illustrative Claim

Petitioner challenges claims 1–31 of the '413 patent. Claims 1, 7, and 14 are independent. Claims 1 and 7 are illustrative:

1. A method for controlling a handheld computing device comprising the steps of:

holding said device in one hand;

moving at least one finger in space in order to signal a command to said device;

electro-optically sensing light reflected from said at least one finger using a sensing means associated with said device;

determining from said sensed light the movement of said finger, and

using said sensed finger movement information, controlling said device in accordance with said command.

7. Handheld computer apparatus comprising:

a housing;

a camera means associated with said housing for obtaining an image using reflected light of at least one object positioned by a user operating said object;

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computer means within said housing for analyzing said image to determine information concerning a position or movement of said object; and

means for controlling a function of said apparatus using said information.

Ex. 1001, 25:39–50, 25:61–26:5.

II. ANALYSIS

A. Summary of Issues

In the below analysis, we first address the grounds of unpatentability. We then address Patent Owner’s discretionary denial and jurisdiction arguments.

B. Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 5), supported by the declaration of Benjamin B. Bederson (Ex. 1008):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 7–9, 11–22, 25, 26, 28	103(a) ²	Numazaki, ³ Knowledge of a PHOSITA ⁴
5, 6, 29	103(a)	Numazaki, DeLeeuw ⁵
10, 23, 24, 27	103(a)	Numazaki, DeLuca ⁶
30, 31	103(a)	Numazaki, Peters ⁷

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. Because the challenged patent was filed before March 16, 2013, we refer to the pre-AIA versions.

³ U.S. Patent 6,144,366, issued Nov. 7, 2000 (“Numazaki”) (Ex. 1003).

⁴ A person having ordinary skill in the art (“PHOSITA”).

⁵ U.S. Patent 6,088,018, issued July 11, 2000 (“DeLeeuw”) (Ex. 1004).

⁶ U.S. Patent 6,064,354, issued May 16, 2000 (“DeLuca”) (Ex. 1005).

⁷ U.S. Patent 6,243,683 B1, issued June 5, 2001 (“Peters”) (Ex. 1006).

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1. *Legal Standards for Unpatentability*

Petitioner bears the burden to demonstrate unpatentability. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). At this preliminary stage, we determine whether the information presented in the Petition shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims would have been unpatentable. *See* 35 U.S.C. § 314(a).

A claim is unpatentable as obvious under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)). We resolve the question of obviousness based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims; (3) the level of skill in the art; and (4) when in evidence, objective indicia of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We apply these principles to the Petition’s challenges.

2. *Level of Ordinary Skill in the Art*

Petitioner asserts that “[a] person having ordinary skill in the art (‘PHOSITA’) at the time of the ’431 Patent would have had at least a bachelor’s degree in electrical engineering or equivalent with at least one year of experience in the field of human computer interaction” and that “[a]dditional education or experience might substitute for the above requirements.” Pet. 3 (citing Ex. 1008 ¶¶ 30–32). Patent Owner does not dispute Petitioner’s level of ordinary skill in the art. Prelim. Resp. 5.

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We are persuaded, on the present record, that Petitioner's declarant's statement is consistent with the problems and solutions in the '431 patent and prior art of record. We adopt this definition for the purposes of this Decision.

3. *Claim Construction*

In *inter partes* review, we construe claims using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2020).

Petitioner provides a number of claim constructions. Pet. 5–12. Patent Owner does not contest Petitioner's claim constructions, but does argue that the preambles of claims 1, 7, and 14 should be limiting. Prelim. Resp. 5–8. Patent Owner further argues that the Petition should have provided a construction for a term in claim 1. We first address each term that is construed by one of the parties and then address Patent Owner's argument concerning the lack of a construction in the Petition.⁸

a) The Preambles

The preambles of claims 1 and 14 both state: "A method for controlling a handheld computing device comprising the steps of . . ." and the preamble of claim 7 states: "Handheld computer apparatus comprising

⁸ As noted below, for the purposes of institution, we accept all of Petitioner's proposed constructions, as well as Patent Owner's argument that the preamble are limiting. However, we invite the parties to address how these preliminary constructions are impacted by the District Court Claim Construction Memorandum and Order (Ex. 2001) which was issued after the pre-institution briefing was submitted.

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. . . .” Ex. 1001, 25:40–41, 25:61, 26:18–19. Petitioner does not address whether the preambles are limiting, but rather attempts to show that independent of whether they are limiting, the preambles are taught by the prior art. *See e.g.* Pet. 17 (“To the extent the preamble is limiting, *Numazaki* teaches . . .”).

Patent Owner argues that the preambles should be limiting because they recite essential structure or steps and are “necessary to give life, meaning, and vitality” to the claims. Prelim. Resp. 5–6 (quoting *Acceleration Bay, LLC v. Activision Blizzard, Inc.*, 908 F.3d 765, 770 (Fed. Cir. Nov. 6, 2018)). Specifically, Patent Owner asserts that each claim includes one or more limitations that refer back to the preamble’s “handheld computing device” or “handheld computer apparatus” for antecedent basis. *Id.* at 6–8. Patent Owner further argues that the ’413 patent discloses different embodiments, with some embodiments being in the form of a computer and some embodiments being in the form of a handheld device. *Id.* at 8 (citing Ex. 1001, 12:59–13:7, Fig. 1A). Patent Owner contends that the claims are directed to the latter embodiments related to a handheld device and, therefore, “the preamble is necessary to give life, meaning, and vitality to claims 1, 7, and 14, consistent with the embodiments that the inventor chose to claim.” *Id.* at 8.

We agree that the preambles of claims 1, 7, and 14 are limiting. This is primarily because in the body of each claim includes “said device” or “said apparatus” which refers back to the preamble and is understood with reference thereto. For example, the last clause of claim 7 states: “means for controlling a function of *said apparatus* using said information.” Ex. 1001, 26:4–5 (emphasis added). “Said apparatus” derives antecedent basis from the “[h]andheld computer apparatus” recited in the preamble. Moreover, the

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“means for controlling a function of said apparatus” is understood because of this reference to the handheld computer apparatus. The limitations of claims 1 and 14 are similar and so this logic applies equally to these claims as well. Thus, we agree that the preamble recites essential structure and is “necessary to give life, meaning, and vitality” to claims 1, 7, and 14.

b) *“camera means associated with said housing for obtaining an image using reflected light of at least one object positioned by a user operating said object”*

Petitioner asserts that, though claim 7 recites “camera means,” it is not a means-plus-function limitation under §112 ¶ 6. Pet. 6. Petitioner argues that “a PHOSITA would have considered ‘camera means associated with said housing’ to have a sufficiently definite meaning as the name for structure.” *Id.* (citing Ex. 1008 ¶ 36). Petitioner further argues that “all optical sensors obtain images by capturing light, so the claimed function is simply describing the general process that all optical sensors employ to obtain images of objects.” *Id.* (citing Ex. 1008 ¶ 36).

As noted above, Patent Owner does not contest Petitioner’s constructions. Prelim. Resp. 5. For the purposes of institution, we accept Petitioner’s construction as consistent with the current record.

c) *“computer means within said housing for analyzing said image to determine information concerning a position or movement of said object”*

Petitioner contends that claim 7’s limitation of “computer means within said housing for analyzing said image to determine information concerning a position or movement of said object” is a means-plus-function limitation under §112 ¶ 6. Pet. 7. Petitioner argues that the limitation’s function is analyzing an image “to determine positioning or movement of an object.” *Id.* Petitioner argues that the corresponding structure “includes a

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computer/processor programmed (1) to identify either natural or artificial features on an object as described . . . or (2) to track the movement using one of the disclosed methods.” *Id.* at 9; *see id.* at 8–9 (discussing the disclosure of the ’431 patent) (citing Ex. 1001, 3:38–47, 3:57–62, 4:9–14, 5:2–23, 6:64–7:13, 8:40–59, 11:16–35).

Petitioner also argues that “objects” should be construed to mean “both separate objects held/controlled by the user and also part of the user’s body, such as a user’s finger or hand.” *Id.* at 8; *see id.* at 7–8 (citing Ex. 1001, 3:39–41, 3:48–50, claims 7–8).

As noted above, Patent Owner does not contest Petitioner’s constructions. Prelim. Resp. 5. For the purposes of institution, we accept Petitioner’s constructions as consistent with the current record.

d) “means for controlling a function of said apparatus using said information”

Petitioner argues that claim 7’s limitation of “means for controlling a function of said apparatus using said information” is a means-plus-function limitation under §112 ¶ 6. Pet. 10. According to Petitioner, the limitation’s function is “controlling a function of the apparatus using information about the object’s location or movement.” *Id.* Petitioner argues that the corresponding structure “is a processor programmed to perform the specific algorithms that accomplish this function” which “includes at least [the] Fig. 9 disclosure.” *Id.* at 10–11.

As noted above, Patent Owner does not contest Petitioner’s constructions. Prelim. Resp. 5. However, as discussed above, we determine that “said apparatus” refers to the handheld computer apparatus in the preamble. Thus, for the purposes of institution, we accept Petitioner’s

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construction with the added requirement that the general purpose computer be a handheld computer apparatus.

e) “means for transmitting information”

Petitioner asserts that claim 11’s limitation of “means for transmitting information” is a means-plus-function limitation under §112 ¶ 6. Pet. 11.

Petitioner argues that the ’431 patent teaches that the structure for performing the limitation’s function of “transmitting information” is a “wireless cellular transceiver” and thus the corresponding structure required by the claim “includes at least a wireless cellular transceiver.” *Id.* at 11–12 (citing Ex. 1001, 12:59–13:3).

As noted above, Patent Owner does not contest Petitioner’s constructions. Prelim. Resp. 5. For the purposes of institution, we accept Petitioner’s construction as consistent with the current record.

f) “electro-optically sensing light reflected from said at least one finger using a sensing means associated with said device”

Patent Owner argues that the Petition should have construed “sensing means” in claim 1 and that the Petition should be denied because of this failure. *Id.* at 24–25. Patent Owner argues that “[t]he Petition must identify how each challenged claim is to be construed” and that there are specific requirements “[f]or means-plus-function terms” that are not satisfied by the Petition for the term “sensing means.” *Id.* at 24 (citing 37 C.F.R. § 42.104(b)). Patent Owner further argues that “term includes the word ‘means,’ but Petitioner fails to identify whether the term requires construction under 35 U.S.C. § 112(f).” *Id.* at 24–25.

However, at the same time, Patent Owner states that it “does not contend that the term “sensing means” requires construction under 35 U.S.C. § 112(f)” (*id.* at 25 n.2) and that the Petition implies that ““camera units” . . .

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correspond[] to the ‘sensing means’” (*id.* at 9).⁹ We further note that according to the Claim Construction Memorandum and Order in one of the related District Court litigations, Patent Owner expressly argued that “sensing means” is not a means-plus-function limitation subject to 35 U.S.C. § 112(f), and the District Court agreed. Ex. 2001, 26, 28.

As neither Petitioner nor Patent Owner argues that “sensing means” is a means-plus-function limitation under §112 ¶ 6, we decline to deny institution on the basis that Petitioner failed to satisfy the requirements of 37 C.F.R. § 42.104(b)(3).

4. *Obviousness over Numazaki and Knowledge of a PHOSITA*

Petitioner argues that Numazaki in view of the knowledge of a person having ordinary skill in the art (“PHOSITA”) would have rendered obvious claims 1–4, 7–9, 11–22, 25, 26, and 28. Pet. 12–40. Patent Owner contends that Numazaki does not disclose all the limitations of claims 1, 7, 11, and 14. Prelim. Resp. 9–24.

We first give an overview of the asserted prior art, Numazaki. This is followed by a discussion of Petitioner’s positions and Patent Owner’s arguments in response where we conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one claim.

a) *Numazaki*

Numazaki “relates to a method and an apparatus for generating information input in which input information is extracted by obtaining a reflected light image of a target object.” Ex. 1003, 1:8–11.

⁹ Claim 2 also requires that “at least one camera is utilized to effect said electro-optical sensing” implying that the sensing means is at least one camera. Ex. 1001, 25:51–52.

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Figure 1, reproduced below, depicts a block diagram for an information input generation apparatus.

FIG.1

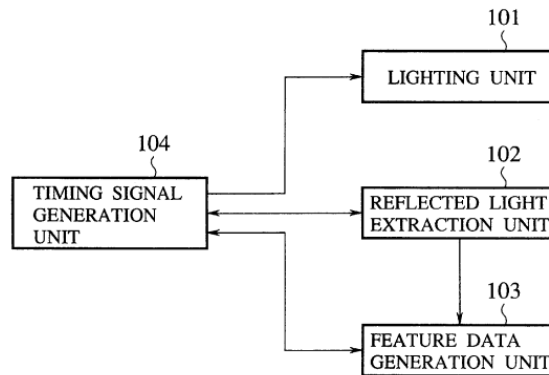


Figure 1 shows that an information input generation apparatus includes a lighting unit (101), a reflected light extraction unit (102), a feature data generation unit (103), and a timing signal generation unit (104). *Id.* at 10:23–28. Numazaki describes emitting light from the light emitting unit (101) and that the intensity of the light varies in time according to a timing signal from the timing signal generation unit (104). *Id.* at 10:29–31. The light is directed onto a target object and light reflected from the target object is extracted by the reflected light extraction unit (102). *Id.* at 10:31–35. Numazaki teaches that the feature data generation unit (103) extracts feature data from the reflected light image. *Id.* at 10:57–61. Numazaki further teaches operating a computer based on information obtained from the feature data. *Id.* at 10:61–66.

Figure 78, reproduced below, illustrates an information input generation apparatus.

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FIG.78

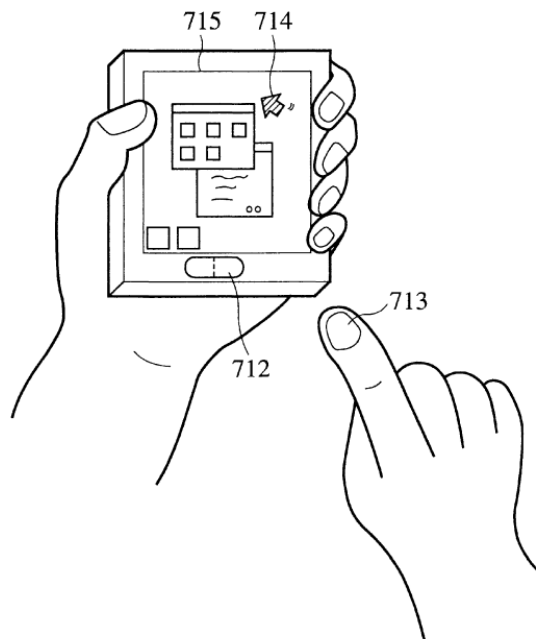


Figure 78 shows “a compact portable information device” having “a size that can be held by one hand.” *Id.* at 52:5–8. The device includes a window (712) for a lighting unit and a photo-detection sensor unit. *Id.* at 52:12–14.

Numazaki describes controlling the position of a cursor (714) on a screen by moving a finger (713) in front of the window (712). *Id.* at 52:14–16.

b) Claim 1

Petitioner relies on Numazaki in view of the knowledge of a PHOSITA for teaching or suggesting all of the elements of claim 1. Pet. 12–21. For example, Petitioner relies on the portable computer with an information input generation device of Figure 78 for teaching the handheld computing device and holding the device in one hand. *Id.* at 17–19. For the remaining method steps of claim 1, Petitioner relies on Numazaki and the knowledge of a PHOSITA. *Id.* at 19–21. In particular, the Petition relies on the teaching of a window (712) for “the lighting unit and the photo-detection

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sensor unit” of Numazaki Figure 78 “which enables the ‘position of a cursor 714 on the screen [to] be controlled by moving a finger 713 in front of this window 712.’” *Id.* at 19 (quoting Ex. 1003, 52:5–16); *see also id.* at 20–21. Petitioner argues that “[a] PHOSITA would have understood that controlling a cursor on the handheld device is signaling a command.” *Id.* (citing Ex. 1008 ¶¶ 46–47).

Numazaki only provides some details about the photo-detection sensor unit. *See generally* Ex. 1003, 50:25–54:6. However, Petitioner relies on Numazaki’s teaching that “light and camera arrangement” of Figure 2 “is incorporated into the eighth embodiment” for more details about the photo-detection sensor unit. Pet. 20; *see also id.* at 15–16 (citing Ex. 1008 ¶ 44) (discussing what a PHOSITA would have understood was incorporated into the eighth embodiment). Petitioner describes Numazaki as teaching a system where two images are obtained of the target object by two different cameras, one with the lighting unit on and one with it off. *Id.* at 12–14 (citing Ex. 1003, 11:20–39, Fig. 2). The images are compared to obtain certain information. *Id.* at 14 (citing Ex. 1003, 11:43–51). Petitioner concludes that the obtained “information is then used by feature data generation unit 103 to determine gestures, pointing, etc. of the target object that may be converted into commands executed by a computer” and that this all reads on the electro-optically sensing, determining, and using steps of claim 1. *Id.* at 20–21.

We determine that the Petition has sufficiently shown at this stage how Numazaki and the knowledge of a PHOSITA would have suggested all of the features of claim 1. Patent Owner argues that Numazaki does not teach or suggest aspects of the electro-optically sensing and determining

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steps of claim 1. Prelim. Resp. 9–11. We address Patent Owner’s argument below.

(1) Electro-optically sensing and determining

Claim 1 requires “electro-optically sensing light reflected from said at least one finger using a sensing means associated with said device; determining from said sensed light the movement of said finger.” Ex. 1001, 25:44–48.

Patent Owner argues that “Numazaki requires two photo-detection units to perform an analysis of a target object and control the computer, so it does not teach or suggest ‘determining’ finger movement from reflected light that is ‘electro-optically’ sensed using one ‘sensor means,’ as set forth in [the] claim.” Prelim. Resp. 11.

Patent Owner does not identify why the claim should be limited to one sensor means or camera. Though the claim refers to “electro-optically sensing light . . . using a sensing means” and “determining from said sensed light,” this does not limit the claim, at least on this record, to only one camera. Unless a more limited construction is indicated by the specification or prosecution history, the indefinite article “a” or “an” is construed in a claim to mean “one or more.” *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. Aug. 18, 2000). Thus, “a sensing means,” based on the current record, appears to encompass one or more cameras.

Patent Owner also argues that “Numazaki does not teach or suggest ‘determining’ finger movement absent the other hardware that Numazaki identifies as necessary, such as the lighting unit, the image-subtraction circuitry, and the associated timing circuitry.” Prelim. Resp. 11.

However, claim 1 uses the term “comprising” to create an “open ended” claim. “‘Comprising’ is a term of art used in claim language which

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means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.” *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997). Thus, the presence of a lighting unit or other hardware is not excluded from the claim. Rather, the ’431 patent teaches the use of LEDs “to illuminate [associated] targets.” Ex. 1001, 3:34–35.

The claimed phrase “electro-optically sensing light . . . using a sensing means” does require “a sensing means,” such as a camera, be used in the step. However, it does not prohibit other hardware from being involved. For example, the claim does not say “electro-optically sensing light . . . using only a sensing means.” Thus, the fact that “Numazaki identifies as necessary . . . the image-subtraction circuitry and associated timing circuitry” does not prevent Numazaki from teaching or suggesting the limitations of open-ended claim 1.

For the above reasons, Patent Owner’s arguments do not undermine the showing by Petitioner that Numazaki and the knowledge of a PHOSITA teaches all of the aspects of claim 1 for purposes of this Decision.

c) Claim 7

Independent claim 7 is directed to a handheld computer apparatus and is similar to method claim 1. *Compare* Ex. 1001, 25:61–26:5 *with id.* at 25:40–50. As such, the Petition relies on the essentially the same teachings of Numazaki discussed above with respect to claim 1 for the features of claim 7, which we agree with for purposes of this Decision for the reasons explained above. *See* Pet. 26–31.

Patent Owner argues that “Numazaki does not teach or suggest one optical image sensor (i.e., one camera means) to obtain an image” as required by claim 7. *Id.* at 13. However, Patent Owner does not identify why

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claim 7 should be limited to one optical image sensor. As noted above, Petitioner construes “camera means” as an optical sensor (Pet. 6), which Patent Owner does not contest (Prelim. Resp. 5). Though the claim refers to “a camera means . . . for obtaining an image,” this does not limit the claim, at least on this record, to only one optical sensor. Unless a more limited construction is indicated by the specification or prosecution history, the indefinite article “a” or “an” is construed in a claim to mean “one or more.” *KCJ Corp.*, 223 F.3d at 1356. Thus, “a camera means,” based on the current record, appears to encompass one or more optical sensors.

Patent Owner also argues that the computer means of claim 7 should be limited to analyzing a single image taken by a single camera and that the two camera and two image system of Numazaki does not satisfy this limitation. Prelim. Resp. 13–15. Based on the current record, we determine that the claim is not so limited.

As noted above, we determine that “a camera means,” based on the current record, appears to encompass one or more optical sensors. Similarly, the limitation “an image” appears to encompass one or more images for the same reason. We see no limitations in claim 7 which would require the camera means or image obtained by the camera means to be limited to a single camera means or a single image.

Patent Owner also argues that the “alleged ‘computer means’ taught by Numazaki cannot analyze a target object absent the other hardware that Numazaki identifies as necessary, such as the lighting unit, the image subtraction circuitry, and the associated timing circuitry.” *Id.* at 15.

Concerning the lighting unit, claim 7 uses the term “comprising” to create an “open ended” claim. “‘Comprising’ is a term of art used in claim language which means that the named elements are essential, but other

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elements may be added and still form a construct within the scope of the claim.” *Genentech*, 112 F.3d at 501. Thus, the presence of a lighting unit is not excluded from the claim. Rather, the ’431 patent teaches the use of LEDs “to illuminate [associated] targets” and claim 12, which depends from claim 7, expressly requires “a light source for illuminating said object.” Ex. 1001, 3:34–35, 26:14–15.

Concerning the image subtraction circuitry, and the timing circuitry, it is not clear why this is not within the meaning of the claimed computer means. The Petition construes the corresponding structure for the computer means as “a computer/processor programmed to identify natural features on an object so as to determine the object’s position.” Pet. 29; *id.* at 7–9. The Petition then identifies how the system of Numazaki teaches a similar structure. *Id.* at 29–30. We agree, based on the current record, that Numazaki teaches a computer/processor programmed to identify natural features on an object so as to determine the object’s position. Thus, without more, Patent Owner’s broad assertion, that Numazaki’s structure is insufficient or that the structure requires only a single camera or a single image, does not undermine the showing in the Petition at this stage.

Thus, we determine that the Petition has established a reasonable likelihood of success with respect to claim 7.

d) Claim 11

Dependent claim 11 recites “Apparatus according to claim 7, further including means for transmitting information.” Ex. 1001, 26:12–13. As noted previously, Petitioner argues that the “means for transmitting information” is subject to 35 U.S.C. § 112 ¶ 6, and that the structure corresponding to the claimed function is “at least a wireless cellular transceiver.” Pet. 11–12 (citing Ex. 1001, 12:59–13:3).

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Petitioner argues that Numazaki’s fifth embodiment teaches a “conference record system” or TV telephone and that “a PHOSITA would have been motivated to implement this transmission functionality in the portable device described in Numazaki’s eighth embodiment.” *Id.* at 32–33 (citing Ex. 1003, 38:6–16, 40:16–49; Ex. 1008 ¶¶ 50–52, 58).

Patent Owner correctly notes that “[t]he Petition fails to identify any cellular transceiver in Numazaki.” Prelim. Resp. 16. Patent Owner also correctly states that though the Petition relies on the “conference record system” in Numazaki’s fifth embodiment, “[t]he Petition fails to identify the transmitter in that embodiment, let alone provide any analysis regarding whether the transmitter allegedly disclosed in Numazaki is an equivalent of the ‘cellular transceiver’ proposed by Petitioner.”¹⁰ *Id.*

For this reason, the Petition does not appear to show how the prior art teaches every limitation of claim 11.

Nevertheless, we do not need to determine whether Petitioner’s showing for claim 11 is sufficient in light of our determination regarding at least claim 1. Therefore, pursuant to USPTO policy implementing the decision in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348 (2018) (“*SAS*”), we institute as to all claims challenged in the petition and on all grounds in the petition. *See* PTAB Consolidated Trial Practice Guide (Nov. 2019) (“Consolidated Guide”),¹¹ 5–6, 64.

e) Claim 14

Independent claim 14 is directed to a method for controlling a handheld computing device and is very similar to method claim 1. *Compare*

¹⁰ Though the Petition discusses a cellular telephone with respect to claim 13, it also does not discuss a cellular transceiver. *See* Pet. 33–34.

¹¹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

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Ex. 1001, 26:18–28 *with id.* at 25:40–50. As such, the Petition relies on the same teachings of Numazaki discussed above with respect to claim 1 for the features of claim 14, which we agree with for purposes of this Decision for the reasons explained above. *See* Pet. 35.

Similarly, Patent Owner argues that the Petition fails to teach or suggest the claim elements of claims 14 for the same reasons with respect to claim 1. Prelim. Resp. 18–19. Patent Owner reiterates some of the same arguments discussed above, for example, arguing that the claimed “a camera” requires a single camera, instead of two cameras, that “image data” is one image, not two, and that Numazaki identifies additional hardware. *Id.* Patent Owner does not provide any additional argument other than what has already been addressed with respect to claim 1 above.

Thus, we determine that the Petition has established a reasonable likelihood of success with respect to claim 14.

f) Claims 2–4, 8, 9, 12, 13, 15–22, 25, 26, 28

Petitioner argues that Numazaki in view of the knowledge of a PHOSITA renders obvious dependent claims 2–4, 8, 9, 12, 13, 15–22, 25, 26, and 28. Pet. 21–26, 31–34, 36–40. Patent Owner does not contest Petitioner’s assertions regarding these claims at this stage. *See generally* Prelim. Resp. We have reviewed Petitioner’s assertions and the supporting evidence, and determine that Petitioner has established a reasonable likelihood of prevailing.

5. Obviousness over Numazaki and DeLeeuw, Numazaki and DeLuca, and Numazaki and, Peters

Petitioner argues that the combination of Numazaki and DeLeeuw renders obvious dependent claims 5, 6, and 29. Pet. 41–48. Petitioner argues that the combination of Numazaki and DeLuca renders obvious dependent

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claims 10, 23, 24, and 27. *Id.* at 48–57. Petitioner argues that the combination of Numazaki and Peters renders obvious dependent claims 30 and 31. *Id.* at 57–61. Patent Owner does not separately address these grounds. *See generally* Prelim. Resp.

We have reviewed Petitioner’s assertions with respect to these claims and the supporting evidence, and determine that Petitioner has established a reasonable likelihood of prevailing.

C. Discretionary Denial

Patent Owner argues that the Petition should be denied based on the earlier filing of IPR2021-00917 (“IPR-917”) for *inter partes* review of the ’431 patent under 35 U.S.C. § 314(a). Prelim. Resp. 25. IPR-917 was filed by Unified Patents, LLC (“Unified”) on May 14, 2021. IPR2021-00917, Paper 3, 1. IPR-917 challenges the patentability of claims 7–13 of the ’431 patent. IPR2021-00917, Paper 1, 5. This includes one ground challenging claims 7–9, 11, and 12 over Numazaki. *Id.* The present *inter partes* review was filed by Petitioner, Apple Inc., on May 21, 2021. Paper 3, 1. As noted previously, Petitioner challenges claims 1–31 of the ’431 patent and all of the grounds involve Numazaki. Pet. 4.

In the context of follow-on petitions, our exercise of discretion under § 314(a) is guided by a set of non-exclusive factors:

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;
3. whether at the time of filing of the second petition the petitioner already received the patent owner’s preliminary response to the first petition or received the Board’s decision on whether to institute review in the first petition;

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4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;
5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha, IPR2016-01357, Paper 19, 16 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i) (“the *General Plastic* factors”). For the reasons discussed below, we do not exercise discretion under § 314(a) to deny institution of trial in this case.

1. Whether the same petitioner previously filed a petition directed to the same claims of the same patent

As noted above, IPR-917 was filed by a Unified, a petitioner different from the present Petitioner. *See* Pet. 63–64. However, as both parties acknowledge, that is not the end of the inquiry. Pet. 63; Reply 1; Sur-reply 2.

The precedential *Valve* decision held that “[w]hen different petitioners challenge the same claims of the same patent, we also consider the nature of any relationship between those petitioners when weighing the *General Plastic* factors.” *Valve Corp. v. Elec. Scripting Prods., Inc.*, IPR2019-00062, -00063, -00084, Paper 11 at 10 (PTAB Apr. 2, 2019) (precedential). In *Valve*, the Board found that the first *General Plastic* factor favored denying institution based on the same claims being challenged and the significant relationship between the first and second petitioners:

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We determine that the first *General Plastic* factor weighs against institution. As discussed above, the petitions in these cases challenge the same claims of the '934 patent as the previous petition in the 1031 IPR. As also discussed above, Valve and HTC were co-defendants in the District Court litigation and were accused of infringing the '934 patent based on HTC's VIVE devices that incorporate technology licensed from Valve. Thus, there is a significant relationship between Valve and HTC with respect to Patent Owner's assertion of the '934 patent. *The complete overlap in the challenged claims and the significant relationship between Valve and HTC favor denying institution.*

Id. at 10 (emphasis added). Thus, *Valve* instructs us to consider the relationship between the petitioners and the overlap in the challenged claims, as between this case and the earlier-filed IPR-917. We address each of these points in turn.

a) Relationship between Petitioner and Unified Patents

While both parties explicitly or implicitly acknowledge that Petitioner is a member of Unified, neither party provides a full analysis as to why we should or should not determine that membership in Unified establishes a significant relationship between Petitioner and Unified. *See generally* Reply; Sur-reply. Petitioner initially fails to mention or discuss its Unified membership (*see* Pet. 61–66) and then discusses other cases and the present case at only a high level (*see generally* Reply). Patent Owner argues that there are shortcomings in Petitioner's analysis of these cases, but does not explain why membership in Unified alone is sufficient to establish a significant relationship between Apple and Unified under *Valve*.

Patent Owner does argue that "Unified's Members pay it a yearly subscription fee to, *inter alia*, file petitions for *inter partes* review in response to patent lawsuits. *See Unified IPR*, Ex. 1020, ¶2." Prelim. Resp. 27. Petitioner does not deny that this is the case, nor does it address why this

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is insufficient to establish a significant relationship between Petitioner and Unified. We further note that none of the specific details of Petitioner's membership in Unified are of record.

Taking the facts as presented by Patent Owner and not contested by Petitioner, we agree that Petitioner and Unified have a relationship. Further, even if Unified was under no obligation to file an *inter partes* review of the '431 patent, such as based on the litigation between Patent Owner and Petitioner, Unified chose to involve itself in a manner that is presumably for the benefit of its members including Petitioner. At the same time, there is no evidence that Unified and Petitioner are the same, have the same interests, or are working jointly in their *inter partes* review cases. *See e.g.*, Pet. 62; Reply 1.

Thus, based on the current record, these facts are neutral.

b) Overlapping Claims

Next we consider the overlap between the claims challenged in this proceeding and the challenged claims in IPR-917. The Petition seeks *inter partes* review of claims 1–31. Pet. 4. The Petition in IPR-917 challenges the patentability of claims 7–13. IPR2021-00917, Paper 1, 5. Thus, there are twenty-four claims at issue in this proceeding that are not at issue in IPR-917. As there is not complete overlap of challenged claims, this weighs against exercising our discretion to deny institution.

c) Factor One Conclusion

Accordingly, though Unified and Petitioner have a relationship, that relationship is not clearly defined on the record. There is a significantly greater number of claims challenged in this Petition versus the petition in IPR-917. Thus, we find that the first *General Plastic* factor weighs against exercising our discretion to deny institution.

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2. *Whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it*

Because we do not find that Petitioner and Unified have a significant relationship, this factor does not apply to Petitioner because Petitioner could not have raised the present challenges in a petition filed by another. Thus, this factor does not weigh in favor of exercising our discretion to deny institution under § 314(a).

3. *Whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition*

Petitioner filed the present Petition seven days after the filing of IPR-917. Thus, the Patent Owner Preliminary Response in IPR-917 had not yet been filed and the institution decision had not yet issued.

Petitioner further argues that:

Petitioner has not substantively modified the grounds presented herein responsive to the Unified IPR [aka, IPR-917]. In fact, when Petitioner became aware of the Unified IPR, the instant petition was near final and Petitioner was preparing to file a separate Petition (IPR2021-00922, which challenges U.S. Patent No. 8,552,079) that relies on *Numazaki* in a nearly identical manner to the instant petition. The petition in IPR2021-00922 was filed just two business days after the Unified IPR and, like the instant petition, it was not substantively changed in any way responsive to the Unified IPR.

Pet. 62.

Accordingly, this factor does not weigh in favor of exercising our discretion to deny institution under § 314(a).

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4. *The length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition*

Petitioner filed its petition only seven days after the filing of IPR-917 and did not wait until a Patent Owner Preliminary Response or institution decision in that case. Thus, this factor does not weigh in favor of exercising our discretion to deny institution under § 314(a).

5. *Whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent*

Petitioner filed the present Petition seven days after the filing of IPR-917. Petitioner argues that “Petitioner learned of the Unified IPR only upon its filing” (Reply 1) and that “Petitioner has not substantively modified the grounds presented herein responsive to the Unified IPR [aka, IPR-917]” (Pet. 62). Given the short timeframe between the filings of the two petitions, by two different petitioners, and Petitioner’s assertion that they were not previously aware of IPR-917, we accept this explanation as adequate. Thus, this factor does not weigh in favor of exercising our discretion to deny institution under § 314(a).

6. *The finite resources of the Board*

“The sixth and seventh factors are efficiency considerations.” *Valve*, IPR2019-00062, Paper 11 at 15. “In general, having multiple petitions challenging the same patent, especially when not filed at or around the same time as in this case, is inefficient and tends to waste resources.” *Id.*

As noted repeatedly above, Petitioner filed the present Petition seven days after the filing of IPR-917. Thus, these two petitions challenging the ’431 patent were filed at around the same time and will be subject to very

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similar timelines. Accordingly, this factor weighs against exercising our discretion to deny institution under § 314(a).

7. *The requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review*

Any trial in the present proceeding could be resolved within the one-year statutory timeframe. Accordingly, this factor weighs against exercising our discretion to deny institution under § 314(a).

8. *Conclusion*

As all the *General Plastic* factors weigh against exercising our discretion to deny institution under § 314(a), we conclude that we should not exercise discretion under § 314(a) and deny institution of trial.

D. *Jurisdiction over Expired Patents*

Patent Owner argues that the Board does not have jurisdiction over expired patents. Prelim. Resp. 28. Patent Owner argues:

35 U.S.C. § 2(a)(1) states that the United States Patent and Trademark Office “shall be responsible for the granting and issuing of patents. . . .” The Patent Trial Appeal Board is required to “conduct inter partes reviews and post-grant reviews pursuant to chapters 31 and 32.” 35 U.S.C. § 6(b)(4). The burden of proof required to find a claim unpatentable is the preponderance of evidence, which is a lower burden of proof than the clear and convincing standard applied in district courts. 35 U.S.C. § 316(a)(9) requires that the Director prescribe regulations “setting forth standards and procedures for allowing the patent owner to move to amend the patent under subsection(d).” This is due, in part, to the fact that there is a lower burden of proof required before the Board.

Id.

Patent Owner appears to be arguing that, because 35 U.S.C. § 316(a)(9) requires the Director to establish procedures to allow for

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amendments of patents and that as expired patents cannot be amended, we do not have jurisdiction over expired patents in *inter partes* review. *Id.*

Patent Owner concludes that as “[t]he ’431 Patent has expired, . . . the opportunity to amend the ’431 Patent is not available to Patent Owner” and therefore “determinations regarding the validity of this expired patent should be reserved for Article III courts under the clear and convincing standard.” *Id.*

Inter partes review of patents, whether expired or not, fits within the USPTO’s mandate “for the granting and issuing of patents” (35 U.S.C. § 2(a)(1)), for as the Supreme Court has stated, “[i]nter partes review is ‘a second look at an earlier administrative grant of a patent’” (*Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1374 (2018) (quoting *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144 (2016))). Our rules have also made clear *inter partes* review covers expired patents. 37 C.F.R. 42.100(b) (2012); *see also, e.g.*, 83 FR 51341 (Oct. 11, 2018) (Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board)¹² (“The claim construction standard adopted in this final rule also is consistent with the same standard that the Office has applied in interpreting claims of expired patents and soon-to-be expired patents. *See, e.g., Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1279 (Fed. Cir. 2017) (noting that “[t]he Board construes claims of an expired patent in accordance with *Phillips* . . . [and] [u]nder that standard, words of a claim are generally given their ordinary and customary meaning”).”).

¹² Available at <https://www.federalregister.gov/d/2018-22006/p-13>.

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Further, the statutes governing *inter partes* review do not limit them to non-expired patents. For example, 35 U.S.C. § 311(b), which sets forth the scope of *inter partes* review, merely refers to patents with no mention of the expiration date. Further, 35 U.S.C. § 311(c) entitled “Filing Deadline” makes no mention of the expiration date of the patent. Elsewhere, 35 U.S.C. § 315 does limit the filing of IPRs based on civil actions and the serving of complaints, but again makes no mention of the expiration date of the patent. Patent Owner does not identify any statute that expressly limits *inter partes* review to non-expired patents.

Patent Owner fails to adequately explain why the requirement to establish procedures to allow for amendments to a patent means that expired patents are not subject to *inter partes* review. For example, the statute does not mandate that amendments to the patent be allowed in all cases.

For all of these reasons, we do not agree that the Board lacks jurisdiction over expired patents.

III. CONCLUSION

For the foregoing reasons, we have determined that there is a reasonable likelihood that the Petitioner would prevail with respect to at least one of the claims challenged in the Petition. We therefore institute trial as to all challenged claims on all grounds stated in the Petition.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, *inter partes* review of claims 7–13 of U.S. Patent 7,933,431 B2 is instituted on all grounds in the Petition;

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FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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